

19.1 Approach to Recommended Mitigation

This chapter describes mitigation measures that, if imposed in any Surface Transportation Board (Board) decision granting the Tongue River Railroad Company (TRRC) the authority to construct and operate the proposed rail line, would avoid, minimize, or compensate for environmental impacts. TRRC has proposed some voluntary mitigation measures, which include regulatory-related requirements and associated best management practices. The Board's Office of Environmental Analysis (OEA) has recommended additional preliminary mitigation measures. The regulations implementing the National Environmental Policy Act (NEPA) require that agencies consider mitigation to reduce environmental impacts of a project. If an agency decides to implement specific mitigation measures, it must do so in its Record of Decision (the Board's license is equivalent to a Record of Decision). OEA developed these preliminary mitigation measures after extensive environmental analyses, agency consultation, and consideration of mitigation suggested by the public and agencies during scoping. In developing these mitigation measures, OEA also considered the January 14, 2011 Council on Environmental Quality (CEQ) memorandum on the appropriate use of mitigation and monitoring. The mitigation measures described in this chapter would minimize the environmental impacts resulting from construction and operation of the proposed rail line. These measures would apply to any build alternative authorized for construction by the Board unless otherwise specified in the mitigation measure.

19.1.1 Conditioning Power of the Board

The Board has the authority to impose conditions to mitigate environmental impacts. Any mitigation measure the Board imposes must relate directly to the transaction before the Board, must be reasonable, and must be supported by the record before the Board. The Board's consistent practice has been to mitigate only those impacts that result directly from the proposed project. The Board typically does not require mitigation for preexisting environmental conditions, such as the effects of existing rail operation.

Agencies participating as cooperating agencies may issue individual decisions concerning the proposed rail line and intent to use information in this Draft Environmental Impact Statement (EIS) for decision-making purposes. They could require additional mitigation measures in their Records of Decision and permits. Agencies other than cooperating agencies are mentioned in OEA's preliminary recommended mitigation because certain mitigation measures would require TRRC to consult, apply for a permit from, or obtain approval from these agencies.

19.1.2 Voluntary Mitigation and Negotiated Agreements

OEA encourages applicants to propose voluntary mitigation. In some situations, voluntary mitigation could replace, supplement, or reach farther than mitigation measures the Board might otherwise impose. Applicants often have knowledge about issues associated with a proposed right-of-way because of project planning and consultation with regulatory agencies during the planning process, and can therefore volunteer mitigation that is relevant.

As an alternative to mitigation that the Board could unilaterally impose (notwithstanding mitigation required by other regulatory agencies that may have jurisdiction over potentially affected resources), OEA encourages applicants to negotiate mutually acceptable agreements with affected communities and other government entities to address potential environmental impacts, if appropriate. Negotiated agreements could be with neighborhoods, communities, counties, cities, regional coalitions, states, and other entities. If applicants submit to the Board any such negotiated agreements, the Board would require compliance with the terms of any such agreements as environmental conditions in any final decision authorizing construction and operation of the proposed rail line. Any potential negotiated agreement would supersede any environmental conditions for that particular community or other entity that the Board might otherwise impose.

19.1.3 Preliminary Nature of Mitigation

OEA's preliminary mitigation measures are based on the information available to date, consultation with appropriate agencies, and the environmental analysis presented in this document. These preliminary mitigation measures could be imposed by the Board in addition to TRRC's voluntary mitigation measures.

OEA emphasizes that the identified mitigation measures are preliminary and invites public and agency comments on these proposed mitigation measures. For OEA to assess the comments effectively, it is critical that the public be specific regarding any desired mitigation and the reasons why the suggested mitigation would be appropriate.

OEA will make its final recommendations on mitigation to the Board in the Final EIS after considering all public comments on this Draft EIS. OEA intends to include all of the voluntary mitigation measures submitted by TRRC during the EIS process in its recommendations to the Board. The Board will then make its final decision regarding the proposed rail line and any conditions it might impose. In making its decision, the Board will consider this Draft EIS, the Final EIS, public and agency comments, and OEA's final mitigation recommendations.

19.2 Mitigation Measures

OEA has concluded that impacts on rail operation and safety, energy resources, and hazardous waste sites would be negligible and, therefore, does not recommend any preliminary mitigation measures for these resources. OEA also does not address the No-Action Alternative in this chapter, because the Board would not be taking an action and this alternative would result in no change in impacts from those already occurring in the existing environment.

Each of the following sections on an affected resource provides TRRC's voluntary measures (VM) and OEA's recommended preliminary mitigation measures (MM). Where mitigation measures from one resource area apply to another resource, the mitigation number is referenced but the text of the measure is not repeated.

19.2.1 Transportation

19.2.1.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measures to mitigate transportation impacts.

- **VM-1.** TRRC shall confine all project-related highway traffic to established roads or project specific roads within the right-of-way to the extent practicable. Where TRRC requires access to roads outside of the right-of-way, TRRC shall make any necessary arrangements with landowners to gain access to private roads needed for construction or operation of the rail line.
- **VM-2.** TRRC shall notify road users of temporary road closures and other construction-related activities during construction of the rail line across existing roads. TRRC shall provide for detours and associated signage, as appropriate, or maintain at least one open lane of traffic at all times to allow for the passage of emergency and other vehicles.
- **VM-3.** TRRC and contractors shall comply with speed limits and applicable laws and regulations when operating vehicles and equipment on public roadways.
- **VM-4.** TRRC shall install appropriate signage and comply with the Federal Highway Administration Manual on Uniform Traffic Control Devices, as implemented by the Montana Department of Transportation for public road crossings.
- **VM-5.** TRRC shall require BNSF or any operators using the rail line to comply with the requirements of the Hazardous Materials Transportation Act and governing regulations of the U.S. Department of Transportation for operations on the TRRC line, to the extent that hazardous materials are transported on the TRRC line.
- **VM-6.** TRRC shall require BNSF or any operators using the rail line to comply with federal safety requirements imposed by the Federal Railroad Administration regarding train operations on the TRRC line, including any applicable speed limits and train lighting requirements.

- **VM-7.** TRRC, in coordination with BNSF or any other operator of the line, shall develop an internal Emergency Response Plan for operations on the TRRC line. This plan shall include a roster of agencies and people to be contacted for specific types of emergencies during rail construction, operation and maintenance activities, procedures to be followed by particular rail employees, emergency routes for vehicles, and the location of emergency equipment.

19.2.1.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measures to reduce transportation impacts.

Grade-Crossing Delay

- **MM-1.** TRRC shall consult with the Montana Department of Transportation, as appropriate, to determine the final design of grade crossings and safety protection for at-grade crossings along the rail line in order to minimize grade crossing delay and increase grade-crossing safety.

Grade-Crossing Safety

- **MM-2.** TRRC shall obtain applicable and reasonable requirements of permits and approvals prior to undertaking any activity within Montana Department of Transportation right-of way or State Highways where the Transportation Commission has jurisdiction (Interstate, National Highway System Non-Interstate, Primary, Secondary, and off-system roads maintained by the Montana Department of Transportation.
- **MM-3.** For each of the public at-grade crossings on the rail line, TRRC shall provide and maintain permanent signs prominently displaying both a toll-free telephone number and a unique grade-crossing identification number in compliance with Federal Highway Administration regulations (23 Code of Federal Regulations Part 655). The toll-free number would enable drivers to report promptly any accidents, malfunctioning warning devices, stalled vehicles, or other dangerous conditions.
- **MM-4.** TRRC shall make Operation Lifesaver educational programs available to communities, schools, and other organizations located along the rail line. Operation Lifesaver is a nationwide, nonprofit organization that provides public education programs to help prevent collisions, injuries, and fatalities at highway/rail grade crossings.
- **MM-1.** See grade-crossing delay mitigation (Section 19.2.1.2, *Grade-Crossing Delay*) for full text of this mitigation measure.

Navigation

- **MM-5.** TRRC shall consult with the Montana Department of Natural Resources and Conservation regarding Administrative Rule of Montana 36.25.1104(1)(a), Authorization

for Use of Navigable Waterway, regarding the need for a lease, license, or easement from the department. TRRC shall comply with the reasonable requirements of any Montana Department of Natural Resources conditions related to construction and operation (including maintenance) of Tongue River bridge crossings. This mitigation measure would apply to any build alternative except the Decker Alternatives and would help limit the impact of the rail line on watercraft traveling the northernmost segments of the Tongue River.

19.2.2 Air Quality

19.2.2.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measures to mitigate climate and air quality impacts.

- **VM-8.** TRRC shall minimize fugitive dust emissions created during project construction activities. Fugitive dust control measures shall include:
 - Ground clearing shall be limited to only the areas necessary for project-related construction activities in order to minimize impacts of wind erosion.
 - Fugitive dust suppression controls shall be implemented, such as spraying water on haul roads or other dusty areas as necessary to reduce dust.
 - Construction contractors shall subject all heavy equipment and vehicles used in construction, operation, and maintenance to regular inspections and maintenance to ensure equipment operation complies with manufacturers' specifications and that the equipment is operating as cleanly and efficiently as possible.
- **VM-9.** TRRC shall require BNSF or any other operator using the rail line to apply the most current version of the BNSF Coal Loading Rule as a means to mitigate coal dust at any mine served by the TRRC line. This rule requires that shippers loading coal into railcars at mines in the Powder River Basin take measures to reduce any loss in transit of coal dust from the shipper's loaded coal cars by at least 85 percent as compared to the loss in transit of coal dust from coal cars where no remedial measures have been taken. The rule also contains a safe harbor provision that defines measures the shipper can take to ensure compliance.

19.2.2.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measures to reduce impacts on air quality.

- **MM-6.** During project-related construction, TRRC shall request that its contractors provide laborers with daily transportation to the work site from a central location to minimize vehicular traffic on unpaved roads in the area and thereby reduce exhaust emissions and fugitive dust.

- **MM-7.** Where vegetation clearing has taken place during project-related construction, TRRC shall begin revegetation as soon as possible to minimize impacts of wind erosion and fugitive dust. Where immediate revegetation is not possible, TRRC shall implement alternative stabilization measures such as matting and mulching. These measures would help to limit fugitive dust, reduce greenhouse gas emissions, and aid with visual impacts.
- **MM-8.** TRRC shall conduct dust suppression activities at work areas. TRRC shall implement appropriate fugitive dust suppression controls, such as applying a magnesium chloride dust suppression treatment, using tarp covers for haul vehicles, installing wind barriers, or other state-approved measures. This measure would also benefit vegetation by limiting exposure to dust.
- **MM-9.** Prior to conducting any open burning during project-related construction or operation, TRRC shall consult with the Montana Department of Environmental Quality regarding its open burning regulations and comply with all such regulations, including obtaining and complying with any reasonable requirements of open burning permits.
- **MM-10.** TRRC shall ensure that all engine-powered equipment and vehicles used in construction, operation, and maintenance of the rail line are subject to a regular inspection and maintenance schedule in order to minimize air pollutant emissions, greenhouse gas emissions, and fuel consumption. Preventive maintenance activities shall include but not be limited to the following actions.
 - Replacing oil and oil filters as recommended by manufacturer instructions.
 - Maintaining proper tire pressure in on-road vehicles.
 - Replacing of worn or end-of-life parts.
 - Scheduling routine equipment service checks.

19.2.3 Greenhouse Gases and Climate Change

19.2.3.1 OEA's Preliminary Recommended Mitigation

OEA recommends the following mitigation measures to reduce impacts of greenhouse gases and climate change.

Greenhouse Gases

- **MM-11.** TRRC shall develop and implement an anti-idling policy for both rail construction and operation and ensure that equipment operators receive training on best practices for reducing fuel consumption in order to reduce project-related greenhouse gas emissions. The anti-idling policy shall include required warm-up periods for equipment and prohibit idling beyond these periods. The policy shall define any exemptions where idling is permitted for safety or operational reasons, such as when ambient temperatures are below levels required for reliable operation. In addition, the use of technologies such

as idle management systems or automatic shutdown features shall be considered part of the policy.

- **MM-12.** TRRC shall require its contractors to use diesel fuel that contains a minimum biodiesel content of 5 percent (B5 blend). If B5 is not available from local fuel suppliers, TRRC shall use fuel with the highest biodiesel content possible in order to reduce greenhouse gas emissions.
- **MM-13.** TRRC shall consider procuring alternative engine and fuel technologies; e.g., hybrid-electric diesel equipment, for construction and operation of the rail line in order to reduce greenhouse gas emissions.
- **MM-14.** TRRC shall evaluate the feasibility of installing solar and wind microgeneration technologies on site offices, lodging, and other facilities to reduce the use of grid- or privately generated electricity in order to reduce greenhouse gas emissions. In making its evaluation, TRRC shall consider the suitability of site conditions and location of solar and wind generation and the technical and economic feasibility of supplementing site electricity demands with renewable power.
- **MM-6.** See air quality mitigation (Section 19.2.2, *Air Quality*) for full text of this mitigation measure.
- **MM-7.** See air quality mitigation (Section 19.2.2, *Air Quality*) for full text of this mitigation measure.
- **MM-10.** See air quality mitigation (Section 19.2.2, *Air Quality*) for full text of this mitigation measure.
- **MM-25.** See biological resources mitigation (Section 19.2.5, *Biological Resources*) for full text of this mitigation measure.

19.2.4 Noise and Vibration

19.2.4.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measures to mitigate noise impacts.

- **VM-10.** TRRC shall minimize, to the extent practicable, construction-related noise disturbances to sensitive noise receptors. Construction and maintenance equipment shall be maintained in good working order with properly functioning mufflers to control noise.
- **VM-11.** TRRC shall consult with officials of schools near the project area where activities during normal school days may be impacted by construction or maintenance noise. To the extent practicable, TRRC may schedule work activities for evenings or weekends to minimize impacts to school activities.

19.2.4.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measures to reduce noise impacts.

- **MM-15.** TRRC shall develop, submit to the Board for review, and implement a construction noise and vibration control plan to minimize project-related construction noise and vibration affecting communities along the rail line. TRRC shall designate a noise control officer/engineer to develop the plan, whose qualifications shall include at least 5 years of experience with major construction noise projects, and board certification membership with the Institute of Noise Control Engineering or registration as a Professional Engineer in Mechanical Engineering or Civil Engineering.
- **MM-16.** TRRC shall minimize, to the extent practicable, construction-related noise disturbances in residential areas. TRRC shall avoid nighttime construction and pile driving near residential areas and employ quieter vibratory pile driving or noise curtains for project-related construction where Federal Transit Administration construction noise criteria are exceeded.
- **MM-17.** TRRC shall employ reasonable and feasible noise mitigation on the new line where OEA-identified receptors would experience noise impacts at or greater than the regulatory analytical threshold of 65 day-night average sound level (DNL)/+3 A-weighted decibels (dBA). The design goal for noise mitigation shall be a 10 dBA noise reduction. Using industry standard loudspeaker testing, the building sound insulation performance shall be determined in accordance with ASTM 966-90, *Standard Guide for Field Measurements of Airborne Sound Insulation of Building Facades and Façade Elements*. The calculated noise reduction shall be at least 5 dBA. Should the calculated noise reduction be less than 5 dBA then no mitigation is warranted as the receptor has sufficient sound insulation.

As train traffic increases on the new rail line, the 65 DNL/+3 dBA noise contour will widen. Therefore, within 2 years of reaching an average of 7.4, 11.9, 18.6 (northern alternatives) or 26.7 (southern alternatives) trains per day, TRRC shall certify to the Board in its quarterly reports that it has met this condition for all affected receptors that fall within the 65 DNL/+3 dBA noise contour for that level of train traffic.

- **MM-18.** TRRC shall consult with interested communities along the existing Colstrip Subdivision and the Fargo to Willmar downline rail segment (if the high production scenario of up to 26.7 trains per day for the southern alternatives and 18.6 for the northern alternatives is reached) and work with these communities to establish quiet zones, if requested.
- **MM-19.** TRRC shall install rail lubrication systems at curves along the rail line where doing so would reduce noise associated with wheel squeal for residential or other noise-sensitive receptors.
- **MM-20.** TRRC shall comply with Federal Railroad Administration regulations (49 Code of Federal Regulations Part 210) establishing decibel limits for train operation.
- **MM-21.** TRRC shall regularly inspect and maintain rail car wheels on trains that operate on the rail line in good working order and minimize the development of wheel flats (where a round wheel is flattened, leading to a clanking sound when a rail car passes).

- **MM-22.** TRRC shall install and properly maintain rail and rail beds on the rail line according to American Railway Engineering and Maintenance of Way Association standards and regularly maintain locomotives, keeping mufflers in good working order to control noise.

19.2.5 Biological Resources

19.2.5.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measures to mitigate impacts on biological resources.

- **VM-12.** TRRC shall design the Tongue River crossing so that no bridge piers shall be placed in the main channel of the Tongue River and the side abutments shall be placed at least ten feet from the top of the bank of the main channel to minimize effects to aquatic habitat and provide adequate passage for wildlife beneath the bridge.
- **VM-13.** TRRC shall consult with the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers regarding the potential presence of endangered and threatened species within the rail line construction areas, and if any, methods to minimize adverse effects to such species
- **VM-14.** TRRC shall implement efforts to avoid bald eagle disturbance during the bald eagle nesting season, typically February 1 through August 15. Nests shall be protected in accordance with U.S. Fish and Wildlife Service guidelines.
- **VM-15.** TRRC shall use construction methods and seed mixes that minimize introduction and spread of noxious weeds. Noxious weed control shall include combinations of mechanical and herbicide spray methods.
- **VM-16.** TRRC shall implement measures to reduce collision and electrocution impacts to birds resulting from power and communication lines and communication towers. Such measures may include:
 - Consult with the U.S. Fish and Wildlife Service and Montana Fish, Wildlife & Parks for current guidelines on tower siting, marking, and guy lines.
 - Incorporate safe designs of electrical distribution lines in accordance with current industry standards and practices to avoid electrocution of eagles, owls, and other smaller raptors.
 - Construct self-supporting wireless communication towers without guy lines to the extent practicable.
 - Use marking devices such as balls or flappers to increase utility line visibility, especially in areas where eagles or other raptors are likely to roost, forage, or nest.

- **VM-17.** TRRC shall design the rail line alignment within the approved corridor to follow existing transportation corridors to the extent practicable to minimize disruptions to established wildlife movement patterns.
- **VM-18.** TRRC shall develop and implement a Fire Prevention Plan for construction and, in coordination with BNSF or any other operator of the rail line, operation of the TRRC line. Plowed fireguards shall be constructed and maintained along the entire rail line, except through any town or village, unless existing features such as parallel roadways or streams provide equivalent fire controls.

19.2.5.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measures to reduce impacts on biological resources.

Vegetation

- **MM-23.** TRRC shall restore areas disturbed by rail construction activities in accordance with a reclamation plan developed in cooperation with the Montana Department of Natural Resources and Conservation and other federal or state agencies that may manage land along the rail line, such as the U.S. Department of Agriculture, Bureau of Land Management, and Montana Fish, Wildlife & Parks. TRRC shall submit the reclamation plan for areas to be disturbed by project-related construction to OEA, the Montana Department of Natural Resources and Conservation, and other appropriate state and federal agency landowners along the rail line. The reclamation plan shall be developed in conjunction with final engineering design and shall clearly designate the areas to be reclaimed; reclamation materials, methods, and timing; and include a monitoring schedule and contingency plans.
- **MM-24.** During project-related construction, TRRC shall comply with weed control plans developed for Rosebud, Big Horn, Custer, and Powder River Counties, Montana. TRRC, in consultation with county weed districts, shall develop a reasonable noxious weed control program prior to commencing project-related rail construction activities. Prior to construction, TRRC shall submit this program to OEA and the weed districts of Rosebud, Big Horn, Custer, and Powder River Counties to ensure consistency with county weed control plans. The program shall require construction methods that minimize the introduction and spread of noxious weeds, including the use of sterile ballast, weed-free seed straw, mulching, and hydroseeding materials. TRRC shall minimize digging in areas where the rhizomes of rhizomatous weed species such as leafy spurge might be cut and spread.
- **MM-25.** Prior to project-related construction, TRRC shall develop and submit a construction and operation wildfire management plan to the Montana Public Service Commission, which regulates intrastate railroads in Montana and oversees the

requirements pertaining to rail-related fire management. TRRC shall observe the following measures in developing the plan.

- After final engineering and overall operation plans are complete, TRRC shall develop the plan in cooperation with the Montana Department of Natural Resources and Conservation Eastern Land Office and other appropriate government agencies and volunteer fire departments.
- The plan shall incorporate specific information about operation, equipment, and personnel on the rail line that might be of use in case a fire occurs.
- The plan shall evaluate and include, as appropriate, state-of-the-art techniques for fire prevention and suppression.
- **MM-26.** During project-related construction, TRRC shall minimize, to the extent practicable, the duration and extent of activity at temporary construction facilities in order to minimize fugitive dust (e.g., staging areas). TRRC shall provide surface treatments to minimize soil compaction (e.g., break up compacted soils during reclamation to promote infiltration) in order to reduce runoff and erosion. TRRC shall promote vegetation regrowth after the facilities are no longer needed to support project-related construction activities.
- **MM-7.** See air quality mitigation (Section 19.2.2, *Air Quality*) for full text of this mitigation measure.

Wildlife

- **MM-27.** Prior to beginning project-related construction, TRRC shall develop a raptor nest monitoring program to minimize disturbances to nesting raptors from construction and operation of the new rail line. The Bureau of Land Management and the U.S. Fish and Wildlife Service shall provide recommendations for nest monitoring for lands under their jurisdictions. The monitoring program shall meet raptor avoidance standards developed by the U.S. Fish and Wildlife Service to mitigate impacts on nesting raptors from construction activities in the right-of-way. The monitoring program shall continue during operation, if necessary, as determined by the U.S. Fish and Wildlife Service and the Bureau of Land Management. The monitoring program shall include but not be limited to the following requirements.
 - TRRC shall conduct an aerial survey to identify new nests and a ground survey to document raptor nest activity between March 1 and July 31 within 1 mile of construction.
 - TRRC shall adhere to Bureau of Land Management (on Bureau of Land Management-administered lands) and U.S. Fish and Wildlife Service timing and distance restrictions for raptor species nests during project-related construction, unless the nest has been documented as inactive by a ground survey.

- If an active raptor nest must be destroyed or relocated because of project-related construction, TRRC shall wait until the nest is inactive in order to comply with the Migratory Bird Treaty Act.
- **MM-28.** TRRC shall implement measures to reduce collision and electrocution risks from project-related power lines and communications towers. TRRC shall incorporate standard raptor-proof features (Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service 2005) into the design of electrical distribution lines to minimize the likelihood of collisions or electrocution of raptor species. These designs shall include a minimum 60-inch separation between conductors and/or grounded hardware and insulation materials and other applicable measures to prevent electrical points of contact.
- **MM-29.** TRRC shall clear vegetation in preparation for project-related construction before or after the breeding bird nesting season (April 15 to July 15) to avoid inadvertent removal of active nests (nesting adults, young, or eggs) and to ensure compliance with the Migratory Bird Treaty Act. If clearing is required during the nesting season, TRRC shall consult with the Bureau of Land Management (for Bureau of Land Management-administered lands) and the U.S. Fish and Wildlife Service on appropriate nest survey methods. TRRC shall conduct a survey of all habitats that would be disturbed by project-related construction during the breeding bird nesting season (April 15 to July 15).
- **MM-30.** TRRC shall design the right-of-way fence to allow movement of wildlife, including big game, across the right-of-way, where applicable. TRRC shall consult and coordinate with Montana Fish, Wildlife & Parks on fence design and shall incorporate appropriate recommendations in Montana Fish, Wildlife & Park's 2012 *A Landowners Guide to Wildlife Friendly Fences: How to Build Fence with Wildlife in Mind*.

Fish

- **MM-31.** If surface water withdrawal is required for project-related construction, TRRC shall obtain prior written approval from the Montana Department of Natural Resources and Conservation Water Rights Bureau. TRRC shall reserve adequate water flow to support indigenous aquatic life. Water withdrawals shall not impede fish passage. TRRC shall design each water intake directly accessible by fish to prevent the intake, *impingement*,¹ and *entrainment* of fish.
- **MM-32.** TRRC shall meet the following requirements for all rail construction activities conducted below the ordinary high water line of fish-bearing streams in order to reduce water quality impacts. TRRC shall not alter river, stream, or lake banks or beds, except for approved permanent crossings.
 - TRRC shall avoid using construction equipment in open waters of rivers and streams, where practicable.

¹ Terms italicized at first use are defined in Chapter 25, *Glossary*.

- TRRC shall clean accumulated grease, oil, mud, and other matter from all equipment used in construction of the rail line prior to using such equipment below the ordinary high water line. TRRC shall repair leaks prior to arriving at the project site and shall inspect all equipment daily for leaks, accumulations of grease, and other matter.
- TRRC shall not fuel and service equipment used for project-related construction work below the ordinary high water line or in a riparian corridor; equipment fueling and servicing would occur in an established staging area. When not in use, TRRC shall store equipment and vehicles in the staging area. Staging areas shall be located a minimum of 150 feet from surface waters or other sensitive habitats such as wetlands.
- TRRC shall clean imported material (e.g., ballast, armoring rock) prior to using the material for rail construction activities in a riparian corridor and shall obtain such fill material from a permitted source (either an existing commercial entity or a source area permitted for the project by the State of Montana).
- **MM-33.** Following the completion of project-related construction, TRRC shall restore and revegetate streambanks using techniques such as brush layering and brush matting (interlacing live branches to form a living ground cover). TRRC shall use erosion control materials to stabilize soil, reduce erosion, and reestablish native vegetation.
- **MM-34.** During project-related construction, TRRC shall comply with the approved in-water work windows and timing restrictions for the protection of fish and other aquatic species, and other reasonable requirements of the in-water work permits as defined by the Montana Department of Natural Resources and Conservation and the U.S. Army Corps of Engineers.
- **MM-35.** During project-related construction, TRRC shall use a bubble curtain or other noise-attenuation method (e.g., wood or nylon pile caps) when installing or proofing pilings below the ordinary high water line of a fish-bearing stream to minimize underwater sound impacts on fish. The diameter of the sound block shall be at least 1 inch larger than the piling being installed. This mitigation measure would apply to the Decker Alternatives, the only build alternatives that may require an in-water structure to support the bridge across the Tongue River.
- **MM-36.** During project-related construction, TRRC shall use a block-net to remove and exclude fish from in-water work areas. TRRC shall deploy the block-net toward the water from land, with the two ends of the net maintained on shore and the middle portion of the net deployed in the water. If fish are observed in the work area during project-related construction, TRRC shall cease work. The fish shall be captured and removed with hand-held dip-nets prior to work commencing. Any fish handling, exclusion, and removal operation shall be consistent with any reasonable requirements of the Montana Department of Natural Resources and Conservation and U.S. Army Corps of Engineers' in-water permits.

- **MM-37.** TRRC shall work with the U.S. Army Corps of Engineers, floodplain administrators for Rosebud, Custer, Big Horn, and Powder River Counties (counties would be specific to the build alternative licensed), and the Montana Department of Natural Resources and Conservation to design the rail line to avoid and minimize incursions into the floodplain and channel migration zones of the Tongue River and other fish-bearing tributaries, to the extent practicable.

Special-Status Species

- **MM-38.** TRRC shall take the following measures to avoid disturbing bald and golden eagle nests during construction and to prevent individuals from feeding on carrion in the right-of-way during operation.
 - Prior to construction, TRRC shall acquire and abide by all reasonable requirements of all appropriate federal and state permits to possess, relocate, or disassemble an eagle's nest, and/or work within 0.5 mile of an eagle's nest, regardless of whether it is active or inactive.
 - During operation, TRRC employees engaged in routine inspections of the rail line shall remove train-killed large animals from the right-of-way in order to protect migrant, wintering, or nesting eagles feeding on such carrion from death by trains. TRRC shall completely remove carrion from the vicinity of the rail line or place it at locations near the right-of-way where there would be no potential for eagle deaths from trains.
 - TRRC shall adhere to Bureau of Land Management (for Bureau of Land Management-administered lands) and U.S. Fish and Wildlife Service timing and distance restrictions during project-related construction activities for identified winter eagle concentration areas, where eagles roost.
- **MM-39.** TRRC shall consult with Montana Fish, Wildlife & Parks and the Bureau of Land Management (for Bureau of Land Management-administered lands) to develop and implement a mitigation program prior to commencing project-related construction activities to minimize impacts on greater sage grouse. The program shall be sustained during operation of the rail line, as coordinated with the Bureau of Land Management and Montana Fish, Wildlife & Parks. The mitigation program shall require but not be limited to the following actions.
 - TRRC shall conduct ground lek surveys of the known leks within 2 miles of the selected right-of-way in accordance with Montana Fish, Wildlife & Parks protocols to document activity prior to beginning project-related construction. TRRC shall not engage in project-related construction activities from March 15 to June 30 within 2 miles of an active lek (i.e., at least one displaying male present). This shall minimize disturbance to breeding activities and nesting females.
 - TRRC shall provide compensatory habitat mitigation in greater sage-grouse core habitat (as defined by Montana Fish, Wildlife & Parks) that overlaps Custer,

Rosebud, Big Horn, and Powder River Counties (counties shall be specific to the build alternative licensed) in accordance with the *Greater Sage-Grouse Habitat Conservation Strategy* (Montana's Greater Sage-Grouse Habitat Conservation Advisory Council 2014).

- If, prior to construction and operation, the U.S. Fish and Wildlife Service lists the greater sage-grouse as threatened or endangered by, TRRC shall coordinate with that agency to determine appropriate actions to ensure compliance with the Endangered Species Act.
- **MM-40.** To maintain greater sage-grouse populations, habitats, and essential migration routes, TRRC shall, prior to beginning project-related construction, consult with the Montana Sage Grouse Oversight Team regarding the requirements of the Montana Sage Grouse Habitat Conservation Program, established by the State of Montana Executive Order 10-2014.
- **MM-41.** Prior to beginning any project-related construction on Montana State Trust Land, TRRC shall hire a biologist with experience in plant identification to conduct a field search of the rail line right-of-way during final-phase engineering to identify special-status plants. If such species are found, TRRC shall consult with Montana Department of Natural Resources and Conservation, Trust Land Management Division to develop and implement appropriate mitigation measures during construction activities. TRRC shall conduct the field search during the appropriate season for identification of special-status plant species.
- **MM-42.** Prior to project-related construction, TRRC, in consultation with USFWS, shall conduct surveys of prairie dog colonies that are large enough to support black-footed ferret to determine presence of black-footed ferret.

19.2.6 Water Resources

19.2.6.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measures to mitigate impacts on water resources.

- **VM-19.** TRRC shall conduct wetland/waterbody delineations of the licensed right-of-way. Wetland delineations shall be conducted by qualified persons using current methods approved by the U.S. Army Corps of Engineers, including regional methods as appropriate.
- **VM-20.** TRRC shall obtain Federal permits required by Section 404 of the Clean Water Act from the U.S. Army Corps of Engineers prior to initiation of project-related construction activities within jurisdictional waters of the United States.
- **VM-21.** TRRC shall obtain water quality certifications required by Section 401 of the Clean Water Act from the Montana Department of Environmental Quality in conjunction

with Section 404 permits from the U.S. Army Corps of Engineers prior to initiation of project related construction activities within jurisdictional waters of the United States.

- **VM-22.** TRRC shall comply with the terms and conditions of U.S. Army Section 404 permits and Section 401 water quality certifications to limit the amounts of fill and/or structures that may be placed in jurisdictional waters of the United States and minimize impacts to water quality.
- **VM-23.** TRRC shall implement any compensatory mitigation for unavoidable impacts to wetlands in accordance with applicable U.S. Army Corps of Engineers Section 404 permits. Methods and quantities of wetland mitigation shall be determined in consultation with the U.S. Army Corps of Engineers and may include:
 - Purchasing credits from an approved wetland mitigation bank;
 - Purchasing credits from the Montana Aquatic Resources Services in lieu fee program; or
 - Permittee-responsible mitigation, such as creation and/or restoration of impacted wetlands.
- **VM-24.** TRRC shall design the Tongue River crossing so that no bridge piers shall be placed in the main channel of the Tongue River to limit the amounts of fill and/or structures that may be placed in jurisdictional waters of the United States and minimize impacts to water quality.
- **VM-25.** TRRC shall construct temporary stream crossings across waterways during construction to provide access for contractors, work crews, and heavy equipment. TRRC shall construct temporary stream crossings of uncontaminated, nonerodible materials and shall include culverts to maintain normal flow in the waterway. Temporary stream crossings shall remain in place for the minimum time required to complete the construction effort. When no longer needed, temporary stream crossing materials shall be removed to upland areas and the waterway channels and banks shall be restored.
- **VM-26.** TRRC shall conduct construction contractor training in the use of temporary construction access stream crossings in order to minimize water quality impacts.
- **VM-27.** TRRC shall install temporary barricades or fencing where appropriate to direct construction traffic across construction access stream crossings, to minimize water quality impacts by preventing travel or construction activities within flowing or standing water.
- **VM-28.** TRRC shall design and construct bridges and culverts to comply with the hydraulic design criteria of either the American Railway Engineering and Maintenance of Way Association or BNSF Railway, whichever is more stringent.
- **VM-29.** TRRC shall design and construct the rail line to maintain natural water flow and drainage patterns to the extent practicable, including placing bridges or culverts through

the railroad embankment as necessary, preventing impoundment of water or excessive drainage, and maintaining the connectivity of floodplains and wetlands.

- **VM-30.** TRRC shall conduct construction activity involving stream crossings, including bridges, culverts, and stream bank encroachments, during periods of low or no flow to the extent practicable.
- **VM-31.** TRRC shall, to the extent practicable, design the rail line alignment to avoid the floodplains of perennial streams, including the Tongue River. Where crossing the floodplains and associated streams is necessary, the rail line shall be designed to cross perpendicularly to the extent practicable. Drainage structures shall be installed to maintain the connectivity of floodplains and minimize obstructions to flood flows.

19.2.6.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measures to reduce impacts on water resources.

Surface Water

- **MM-43.** During final rail design, TRRC shall consult with the U.S. Army Corps of Engineers on recommended riverbank stabilization methods (as described in the U.S. Environmental Protection Agency's *National Management Measures to Control Nonpoint Source Pollution from Hydromodification*) at bridge crossings and riprap areas to prevent or reduce the impacts of soil erosion and sedimentation loading on area streams and the Tongue River. Appropriate methods may include placing or planting trees, and other vegetative plantings with rock riprap along bridge sites and stream encroachment areas. To prevent unnecessary degradation of water quality due to erosion, revegetation efforts shall begin as soon as possible after construction is completed in a given area.
- **MM-44.** Prior to project-related construction, TRRC shall consult and coordinate with the floodplain administrators for Rosebud, Custer, Big Horn, and Powder River Counties (counties shall be specific to the build alternative licensed) to ensure that new project-related stream and floodplain crossings are appropriately designed. For crossings within the mapped 100-year floodplain, TRRC shall design drainage crossing structures to pass the 100-year flood.
- **MM-45.** Prior to project-related construction, TRRC shall prepare an analysis for the Montana Department of Natural Resources and Conservation and the local county floodplain administrator. The analysis shall document that the final design for any bridges constructed over rivers and perennial streams in a Federal Emergency Management Agency-designated 100-year floodplain shall not increase the upstream elevation of the 100-year flood by more than 0.5 feet or significantly increase flood velocities. If TRRC's analysis concludes that any bridge would increase the upstream elevation of the 100-year flood by more than 0.5 feet or significantly increase flood

velocities, TRRC shall redesign the bridge to reduce these impacts to a less than 0.5-foot increase in the 100-year flood elevation.

- **MM-46.** TRRC shall design, construct, and operate the rail line and associated facilities, including bridge abutments, to maintain existing water patterns and flow conditions and provide long-term hydrologic stability by conforming to natural stream gradients and stream channel alignment, and avoiding altered subsurface flow, to the extent practicable. Project-related supporting structures shall be designed to minimize scour and increased flow velocity, to the extent practicable.
- **MM-47.** TRRC shall ensure that all culverts and bridges for the rail line are sufficiently clear of debris to avoid blocking fish passage (where applicable), altering streamflow, and increasing flooding. TRRC shall inspect all project-related bridges and culverts semiannually and shall promptly remove and properly dispose of debris.
- **MM-48.** During project-related construction, TRRC shall remove all project-related construction debris (including construction materials, soil, or woody debris) from water bodies as soon as practicable.
- **MM-49.** TRRC shall construct water crossings for the rail line to minimize disturbances to streambeds, streambanks, and flow.
- **MM-50.** During project-related construction, TRRC shall conduct all off-road travel and clearing in a manner that maintains existing surface and subsurface hydrology and water quality, to the extent practicable. If project-related off-road construction activities are required beyond the right-of-way, access beyond the right-of-way shall be approved by the landowner. TRRC shall undertake any off-road travel beyond the right-of-way only if it can be accomplished by limiting damage to vegetation or the ground surface.
- **MM-51.** To limit disturbance to water quality, streambeds, and streambanks, TRRC shall not drive construction vehicles into streams or cross streams at locations other than crossing points established by the U.S. Army Corps of Engineers and the Montana Department of Natural Resources and Conservation.
- **MM-52.** To limit potential water quality impacts during project-related construction, TRRC shall use contaminant-free embankment materials. This will include materials free of petro-chemicals or any other contaminant that could affect water quality.
- **MM-26.** See biological resources mitigation (Section 19.2.5, *Biological Resources*) for full text of this mitigation measure.

Groundwater

- **MM-53.** To ensure that overall groundwater quantity and quality are not unnecessarily altered or diminished by construction of the rail line, TRRC shall submit detailed information about its construction plans to the Water Protection Bureau of the Montana Department of Environmental Quality.

- **MM-54.** To mitigate the closing of active wells within the rail line right-of-way, TRRC shall consult with the well owner to attempt to replace each active well closed with a new well, as possible.
- **MM-26.** See biological resources mitigation (Section 19.2.5, *Biological Resources*) for full text of this mitigation measure.

Floodplains

- **MM-55.** Where the rail line infringes on the floodplain, TRRC shall install drainage structures to ensure that the rail line does not restrict or reroute the 25-year flood.
- **MM-44.** See water resources mitigation (Section 19.2.6, *Water Resources, Surface Water*) for full text of this mitigation measure.
- **MM-45.** See water resources mitigation (Section 19.2.6, *Water Resources, Surface Water*) for full text of this mitigation measure.
- **MM-47.** See water resources mitigation (Section 19.2.6, *Water Resources, Surface Water*) for full text of this mitigation measure.

Wetlands

- **MM-56.** Prior to beginning project-related construction, TRRC shall complete detailed jurisdictional delineations of wetlands and other surface waters to identify areas that are subject to regulation under Section 404 of the Clean Water Act for any ancillary facilities to be located outside of the right-of-way.
- **MM-57.** TRRC shall obtain and abide by all reasonable requirements of all necessary federal, state and local permits and authorizations required for fill placement in wetlands and nonwetland surface waters. TRRC shall incorporate all relevant conditions from federal, state and local authorizations into construction contract specifications for the rail line.
- **MM-58.** TRRC shall mitigate project-related unavoidable impacts on waters of the United States, including wetlands and streams, in accordance with the reasonable requirements of Section 404 of the Clean Water Act and the Compensatory Mitigation for Losses of Aquatic Resources, Final Rule (commonly referred to as the Final Mitigation Rule), effective June 9, 2008 (73 *Federal Register* 19594–19705). In addition, TRRC shall mitigate in accordance with the procedures specified in *Montana Stream Mitigation Procedure* (U.S. Army Corps of Engineers 2013) that have been established for impacts on waters of the United States in Montana. Wetland compensatory mitigation could include restoration (reestablishment or rehabilitation), creation (establishment), enhancement, or preservation. Ratios would range from 1:1 to 4:1 depending on the compensatory mitigation that would be chosen. Other mitigation options may include an in-lieu fee program or purchasing credits in an approved wetland bank, such as the Lower Middle Yellowstone Umbrella Mitigation Bank.

- **MM-59.** During project-related construction, TRRC shall implement all reasonable best management practices to minimize project-related impacts on wetlands and nonwetland waters of the United States that would remain in or adjacent to the right-of-way following construction of the rail line.

19.2.7 Visual Resources

19.2.7.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measure for mitigating potential impacts on visual resources.

- **VM-32.** TRRC shall paint metal signal and communications cabinets using flat, natural colors to blend in with the natural surroundings.

19.2.7.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measures to reduce impacts on visual resources.

- **MM-60.** TRRC shall direct nighttime lighting, if required, onto the immediate project area during project-related construction to minimize impacts from shining lights on sensitive viewers, sensitive natural resource areas, recreational areas, and roadway or trail corridors.
- **MM-61.** TRRC shall install visual barriers, as appropriate, to obstruct undesirable views of project-related construction activities and to maintain the privacy of adjacent viewers.
- **MM-62.** TRRC shall grade contours to create slopes with undulations and topographical variations that mimic natural terrain, where possible. If this grading practice results in larger areas of cut or fill that would further degrade natural features of scenic value, TRRC shall not implement this measure at those locations. For example, a steeper cut slope may be more desirable than removing many trees to create more rounded terrain. TRRC shall grade and restore roadbeds that are abandoned because of roadway relocation due to project-related construction to mimic the adjacent natural landscape and revegetate the roadway surface.
- **MM-63.** TRRC shall use native grass and wildflower species in erosion control measures. TRRC shall choose indigenous species in erosion-control measures that are appropriate for the surrounding habitat. Under no circumstances shall TRRC use invasive plant species in any erosion control measures.
- **MM-64.** TRRC shall design rail and road bridges that complement the natural landscape, are aesthetically pleasing, and minimize visual impacts on the landscape. In addition, telecommunication towers shall receive color treatments to help them recede into the landscape.

New structures shall be painted or colored with a shade that is 1 to 2 degrees darker than the general surrounding area. Colors shall be chosen from the U.S. Bureau of Land Management Standard Environmental Colors Chart CC-001: June 2008. Because color selection will vary by location, TRRC shall employ the use of color panels evaluated from key observation points during common lighting conditions (front versus back lighting) to aid in the appropriate color selection. Color selection shall be made based on the coloring of the most prevalent season. Panels shall be a minimum of 3 feet by 2 feet in dimension and evaluated from various distances, but within 1,000 feet, to ensure the best possible color selection.

All paints used for the color panels and structures shall be color matched directly from the physical color chart and not a digital or color-reproduced version of the color chart. If an appropriate color does not exist on the chart, colors can be chosen by sampling colors in photographs of the surrounding area. Paints shall use a dull, flat, or satin finish only. Appropriate paint type shall be selected for the finished structures to ensure long-term durability of the painted surfaces. TRRC shall maintain the paint color over time. Concrete or shotcrete structures shall implement aesthetic design features mimicking natural materials (e.g., stone or rock surfacing) and colors to reduce visibility and to blend better with the landscape.

- **MM-7.** See air quality mitigation (Section 19.2.2, *Air Quality*) for full text of this mitigation measure.

19.2.8 Cultural Resources

19.2.8.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measure to mitigate impacts on cultural resources.

- **VM-33.** TRCC shall comply with the terms and conditions of the Programmatic Agreement being developed by OEA, the Advisory Council on Historic Preservation (ACHP), Montana State Historic Preservation Office, other federal and state agencies in consultation with, federally recognized tribes, and other consulting parties, including local landowners and preservation groups.

19.2.8.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measure to reduce impacts on cultural resources.

- **MM-65.** Prior to project-related construction, TRRC shall develop protocols to inform construction supervisors of the importance of protecting archaeological resources, graves, and other cultural resources that may be discovered during construction. The protocols shall instruct construction supervisors in how to recognize and treat the resources.

19.2.9 Land Resources

19.2.9.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measures for mitigating potential impacts on land use.

- **VM-34.** TRRC shall develop and, as appropriate in coordination with BNSF or any other operator of the rail line, implement a plan to prevent spills of oil or other petroleum products during construction, operation, and maintenance of the rail line. The plan shall address fuel storage and transfer practices to prevent spills and leaks, first response procedures for spills, and reporting and notification procedures.
- **VM-35.** TRRC shall negotiate in good faith with landowners for acquisition of right-of-way needed for the rail line. TRRC shall attempt to negotiate fair compensation for property, and where applicable, shall work cooperatively with landowners on site-specific issues such as fencing, cattle passes, access roads, or others.
- **VM-36.** TRRC shall work cooperatively with affected landowners to appropriately redress any damage that may occur from project-related construction activities.
- **VM-37.** TRRC shall endeavor to avoid obstructing business entrances and exits from project-related construction activities, except as required to move equipment or otherwise to the extent practicable.
- **VM-38.** TRRC shall make reasonable efforts to identify all utilities that may be materially affected by the proposed construction within the right-of-way or that cross the right-of-way. TRRC shall consult with utility owners during design and construction so that utilities are protected during project-related construction activities. TRRC shall notify the owner of each such utility identified prior to project-related construction activities and coordinate with the owner to minimize damage to utilities.
- **VM-39.** TRRC and construction contractors shall be required to dispose of waste generated during project-related construction activities in accordance with applicable Federal, state, and local regulations.

19.2.9.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measures to reduce impacts on land resources.

Land Use

- **MM-66.** TRRC shall negotiate compensation—for direct loss of agricultural land in the right-of-way and the indirect loss of agricultural land from severance—with each landowner whose property would be affected by construction and operation of the rail line. TRRC shall assist landowners in developing alternative agricultural uses for

severed land, where appropriate. TRRC shall apply a combination of alternative land use assistance and compensation as agreed upon during right-of-way negotiations.

- **MM-67.** TRRC shall install cattle underpasses (oval, corrugated metal structures, approximately 11 feet high and 12 feet wide) along the right-of-way. These underpasses could also be used by wildlife. TRRC shall work with landowners to identify appropriate locations for cattle passes.
- **MM-68.** Where capital improvements are displaced by construction or operation of the rail line, TRRC shall relocate or replace these improvements or provide appropriate compensation based on the fair market value of the capital improvements being displaced.
- **MM-69.** TRRC shall consult with landowners to limit the loss of access to properties during rail construction. TRRC shall consult with appropriate landowners to determine the location of property access roads that would be crossed by the rail line. TRRC shall install temporary property access points for landowner use if main access routes must be obstructed during project-related construction.
- **MM-70.** TRRC shall coordinate with landowners while negotiating the railroad right-of-way easement to identify key access points that would be affected by operation of the rail line. TRRC shall install at-grade crossings and relocate roads to maintain adequate access to and movement within properties.
- **MM-71.** If one of the Tongue River Alternatives or Tongue River Road Alternatives is licensed by the Board, TRRC shall adhere to the reasonable mitigation conditions imposed by the Montana Department of Fish, Wildlife & Parks in any easement granted by the State of Montana allowing TRRC to cross the Miles City Fish Hatchery.
- **MM-72.** If one of the Tongue River Alternatives, Tongue River Road Alternatives, or Moon Creek Alternatives is licensed by the Board, TRRC shall adhere to the reasonable mitigation conditions imposed by the U.S. Department of Agriculture in any easement allowing TRRC to cross the Fort Keogh Livestock and Range Research Laboratory property line.
- **MM-24.** See biological resources mitigation (Section 19.2.5, *Biological Resources*) for full text of this mitigation measure.

Recreation

- **MM-73.** Prior to project-related construction, TRRC shall consult with Montana Fish, Wildlife & Parks, Montana Department of Natural Resources and Conservation, Custer National Forest—Ashland District, Bureau of Land Management, the City of Miles City, and other user groups as appropriate, to develop a plan to limit, to the extent practicable, impacts on recreational resources under their management or jurisdiction. TRRC shall develop the plan prior to completing the final engineering plans and following consultation to determine the location of all public roads used as access points to a

recreational area that would be crossed by the rail line. The plan shall designate temporary access points if main access routes must be obstructed during construction. The plan shall include the number and location of access points as decided during consultation with applicable agencies.

- **MM-74.** TRRC shall coordinate with owners of properties used for recreation during project-related right-of-way acquisition negotiations to provide adequate private road at-grade crossings not otherwise identified to ensure that recreationists maintain access to and movement within recreational properties and areas.
- **MM-60.** See visual resources mitigation (Section 19.2.7, *Visual Resources*) for full text of this mitigation measure.
- **MM-70.** See land use mitigation (Section 19.2.9, *Land Resources, Land Use*) for full text of this mitigation measure.

Section 4(f) Resources

OEA recommends the following mitigation measure to reduce impacts on Section 4(f) resources should the licensed build alternative cross the Spotted Eagle Recreation Area.

- **MM-75.** If any one of the Tongue River Alternatives or the Tongue River Road Alternatives is licensed by the Board, TRRC shall consult with the City of Miles City, Montana, to identify appropriate enhancement and improvements to the Spotted Eagle Recreation Area. These improvements shall be sufficient to offset the loss of recreation facilities and uses caused by the permanent incorporation of land into the rail line right-of-way. TRRC shall compensate the City of Miles City for agreed-upon improvements.
- **MM-76.** TRRC shall provide a tree buffer between the Spotted Eagle Recreation Area and the railroad right-of-way to reduce the visual impact on that area.

Section 6(f) Resources

OEA recommends the following mitigation measure to reduce impacts on Section 6(f) resources should the licensed build alternative cross the Spotted Eagle Recreation Area.

- **MM-77.** If any of the Tongue River Alternatives or the Tongue River Road Alternatives is licensed by the Board, TRRC shall prepare a 6(f) conversion plan in consultation with Montana Fish, Wildlife & Parks. The plan should identify a replacement recreational property of at least equal fair market value and of reasonably equivalent usefulness and location as the land converted in Spotted Eagle Recreation Area to nonrecreational use. Furthermore, the land proposed for replacement in the conversion plan must meet public outdoor needs as indicated in the Montana Statewide Comprehensive Outdoor Recreation Plan. Following the approval of the conversion plan by Montana Fish, Wildlife & Parks and the National Park Service, TRRC shall obtain and provide the replacement land to Montana Fish, Wildlife & Parks.

19.2.10 Geology, Soils, and Paleontological Resources

19.2.10.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measures for mitigating potential impacts on geology, soils, and paleontological resources.

- **VM-40.** TRRC shall obtain coverage under the Montana Department of Environmental Quality General Permit for Storm Water Discharges Associated with Construction Activity (MTR10000) and implement a Storm Water Pollution Prevention Plan (SWPPP) during construction. Best management practices (BMPs) shall be designed, installed, and maintained to minimize erosion and control sediment runoff from disturbed land surfaces. BMPs shall be maintained until all disturbed land surfaces have achieved final stabilization in accordance with the permit. Requirements of the SWPPP shall include:
 - Ground disturbance shall be limited to only the areas necessary for project-related construction activities.
 - Appropriate erosion control measures shall be employed to minimize the potential for erosion of soil stockpiles until they are removed and the area is restored.
 - Disturbed areas shall be restored as soon as practicable after construction ends on a particular stretch of rail line and the goal of restoration shall be the rapid and permanent reestablishment of native ground cover on disturbed areas to minimize soil erosion.
 - If weather or season precludes the prompt reestablishment of vegetation, temporary erosion control measures shall be implemented.
- **VM-41.** TRRC shall design and construct the rail line to balance cut and fill earthwork quantities to the extent practicable, in order to minimize the quantities of materials required to be excavated, transported, or placed off site.
- **VM-42.** TRRC shall conduct geotechnical investigations to identify soils and bedrock in cut areas with potential for slumping and include, where appropriate, engineering controls to avoid slumping.
- **VM-43.** If slumping occurs during construction, TRRC shall institute remedial actions immediately following slump failure.

19.2.10.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measures to reduce impacts related to geology, soils, and paleontological resources.

- **MM-78.** TRRC shall design the rail line and associated facilities in accordance with engineering criteria related to soil and geologic hazards. TRRC shall consider the steep

gradient in the project area in order to mitigate potential soil erosion, possible impacts on the stability of bridges and tracks and degradation to surface water quality.

- **MM-79.** TRRC shall contract with a qualified paleontologist to develop and implement a paleontological resources treatment plan for state and federal land to mitigate potential impacts on paleontological resources on lands classified as PFYC 4 or 5.² The plan shall include the following requirements.
 - A preconstruction survey where appropriate to describe and recover paleontological resources found on the surface.
 - Monitoring of ground-disturbing activities during construction to recover paleontological resources.
 - Identification, preparation, and documentation of fossils collected during surveys or monitoring.
 - Curation and deposition of significant paleontological resources into a federally approved repository.

19.2.11 Socioeconomics

19.2.11.1 Applicant's Voluntary Mitigation Measures

TRRC voluntarily proposes the following measure to mitigate socioeconomic impacts.

- **VM-44.** TRRC shall appoint a Community Liaison to consult with affected communities, businesses, and agencies; develop cooperative solutions to local concerns; be available for public meetings; and conduct periodic public outreach. TRRC shall provide the name, telephone number, and email address of the Community Liaison to mayors and other local officials in each community through which the new rail line passes.
- **VM-45.** TRRC shall appoint a Tribal Liaison to assist in addressing issues of concerns to federally recognized tribes; develop cooperative solutions to tribal concerns; be available for tribal meetings; and conduct periodic outreach. TRRC shall provide the name, telephone number, and email address of the Tribal Liaison to officials of each tribe that wish to be notified.
- **VM-46.** The TRRC Tribal Liaison shall also assist in ensuring that members of federally recognized tribes receive an equal opportunity to apply for and secure temporary construction and full-time operational jobs with the railroad.

² The Potential Fossil Yield Classification (PFYC) System is a five-tiered system that classifies geological units based on the relative abundance of fossils and their potential to be adversely affected, with the higher class numbers indicating a higher potential for paleontological impacts. See Section 13.3, *Paleontological Resources* for further details.

19.2.11.2 OEA's Preliminary Recommended Mitigation

OEA recommends the following additional mitigation measures to reduce socioeconomic impacts.

- **MM-66.** See land use mitigation (Section 19.2.9, *Land Resources, Land Use*) for full text of this mitigation measure.
- **MM-68.** See land use mitigation (Section 19.2.9, *Land Resources, Land Use*) for full text of this mitigation measure.

19.2.12 Environmental Justice

OEA recommends the following additional mitigation measures to reduce environmental justice impacts.

19.2.12.1 OEA's Preliminary Recommended Mitigation

- **MM-15.** See noise and vibration mitigation (Section 19.2.4, *Noise and Vibration*) for full text of this mitigation measure.
- **MM-16.** See noise and vibration mitigation (Section 19.2.4, *Noise and Vibration*) for full text of this mitigation measure.
- **MM-17.** See noise and vibration mitigation (Section 19.2.4, *Noise and Vibration*) for full text of this mitigation measure.
- **MM-18.** See noise and vibration mitigation (Section 19.2.4, *Noise and Vibration*) for full text of this mitigation measure.
- **MM-19.** See noise and vibration mitigation (Section 19.2.4, *Noise and Vibration*) for full text of this mitigation measure.
- **MM-20.** See noise and vibration mitigation (Section 19.2.4, *Noise and Vibration*) for full text of this mitigation measure.
- **MM-21.** See noise and vibration mitigation (Section 19.2.4, *Noise and Vibration*) for full text of this mitigation measure.
- **MM-22.** See noise and vibration mitigation (Section 19.2.4, *Noise and Vibration*) for full text of this mitigation measure.

19.2.13 General Monitoring and Enforcement

19.2.13.1 OEA's Preliminary Recommended Mitigation

OEA recommends the following mitigation measures for monitoring and enforcement of whatever mitigation might ultimately be imposed by the Board.

- **MM-80.** If there is a material change in the facts or circumstances upon which the Board relied in imposing specific environmental mitigation conditions, and upon petition by any party who demonstrates such material change, the Board shall consider revising its final mitigation, if warranted and appropriate.
- **MM-81.** TRRC shall submit quarterly reports to OEA on the progress of, implementation of, and compliance with all Board-imposed mitigation measures. The reporting period for these quarterly reports shall begin on the date of the Board's final decision authorizing the project until 1 year after TRRC has completed project-related construction activities. TRRC shall submit copies of the quarterly reports within 30 days following the end of each quarterly reporting period and distribute the reports to appropriate federal and state agencies, as specified by OEA.
- **MM-82.** Within 60 days following a Board decision authorizing the proposed rail line, TRRC shall prepare and submit an annotated outline of the information to be provided in required quarterly reports to OEA for review and approval.
- **MM-83.** TRRC shall retain a third-party contractor to assist OEA in the monitoring and enforcement of mitigation measures on an as-needed basis until 1 year after TRRC has completed project-related construction activities.